SHIRK, ROBERT D. Development and Validation of a Specific Learning Disabilities Concept Questionnaire for Parents. (1975) Directed by: Dr. Rebecca M. Smith. Pp. 69.

The purpose of this study was to develop and validate an instrument to measure the level of conceptual understanding about the multi-etiological syndrome of specific learning disabilities of parents who have children suspected of having a Specific Learning Disability.

The criterion-related validity was determined by a chi-square analysis among three groups of subjects: (a) 26 professional-semi-professional (Salem College Special Education Certificate students), (b) 25 parents whose children were being tutored at the Center for Special Education, Salem College, Winston-Salem, North Carolina, and (c) 44 parents whose children were being evaluated for a Specific Learning Disability.

The analysis of a 48-item questionnaire supported the hypothesis that there is a difference in the conceptual understanding of the specific learning disability syndrome among the three groups.

A 2x2 chi-square analysis identified 34 items which discriminated significantly between (a) the professional-semi-professional group and (b) the parents with children being evaluated for the first time. These items composed the revised instrument, which yielded an internal consistency coefficient of .68 by the Kuder-Richardson Formula 21.

The conclusion is that there is a significant difference in the conceptual understanding of specific learning disabilities among the three groups and a valid paper and pencil test can be developed to measure this difference.

DEVELOPMENT AND VALIDATION OF A SPECIFIC LEARNING DISABILITIES CONCEPT QUESTIONNAIRE FOR PARENTS

by

Robert D. Shirk

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APPROVAL PAGE

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CHAPTER I

INTRODUCTION

Specific learning disability is a particular kind of cognitive difficulty involving primarily the language faculties. When a child is hampered in these skill areas by a developmental lag, the result is a below grade-level performance, not only in the language arts, but across the total educational spectrum. The low performance occurs because the reading, writing and spelling difficulty elicits poor work in such subject matter as geography, science, and social studies. The parents of such children, pressured by the need and desire for high academic achievement by their children, soon find themselves on a frustrating search for help. Perhaps it starts when the pediatrician checks for hyperactivity, brain-damage, or perceptual handicap; perhaps it starts when the psychiatrist is consulted about the child's emotional state; or maybe the ophthalmologist with concern about the child's visual acuity (McGrady, 1971).

The Center for Special Education, Salem College, Winston-Salem, North Carolina, is a clinic designed to evaluate and assist children suspected of having a specific learning disability. Dr. Lucia Karnes, Director of the Center and Professor of Psychology and Education at Salem College has noted in her interviews with the parents

of these children that the level of their understanding about learning disabilities varies with educational background, geographical location, and length of time in search of help for their child. In view of the increasing number of requests for the diagnostic services of the Center for Special Education and the amount of time spent repeating the same explanations to parents from case to case, this study was initiated to determine if a measure of parental understanding about the basic concepts of learning disabilities could be developed. Perhaps with such a measure available, a preinterview educational period could be developed to expedite the interview.

Terminology

The term "specific learning disability" as used in this thesis, is chosen from a multitude of terms used to describe an educational phenomenon in which the child manifests an educationally significant discrepancy between language behavior and his actual level of language functioning (Bateman, 1964).

"Minimal brain dysfunction," "hyperkinesis," "Strauss syndrome," "word-blindness," "perceptual handicap," "strephosymbolia," "specific learning disability," "dyslexia," "maturational lag," and "central nervous system dysfunction" are a few examples of the many other terms used to describe this condition. Gearhart (1973) concluded the following:

1. Most definitions indicate that there must be a significant discrepancy between the child's actual level of functioning (in arithmetic, reading, or other language function) and that level of functioning that might be expected in consideration of his intellectual potential and his sensory capability.

2. Most definitions exclude from the learning disabilities category the visually disabled, the auditorially handicapped, the emotionally disturbed, and the mentally retarded. There is somewhat less agreement particularly in practice in the exclusion of children with significant motor handicaps.

3. The culturally disadvantaged are often excluded from the learning disabilities category by definition, but in public school practice, if a child is culturally disadvantaged and has for example, a definite visual-perception problem, he is often included in the learning disabilities program. In contrast, if he is mentally retarded and has a definite visual-perception problem, he is generally not included.

4. In many cases it is assumed that there is a central nervous system dysfunction; however, the means whereby this must be shown to exist vary greatly. In a similar manner it is generally assumed that one or more of the learning abilities must be malfunctioning, but proof of this is not often required for entrance into a program of special services (pp. 8, 9).

In North Carolina a learning disabled child is defined as one who

exhibits a dysfunction in one or more of the basic psychological processes involved in understanding or using spoken or written language. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling, or arithmetic. They do not include learning difficulties which are due primarily to visual, hearing, or motor handicaps, to mental retardation or to emotional disturbance (North Carolina Department of Public Instruction, 1970-71, p. 31).

Frequency of Occurrence

The haziness of terminology and definition of the learning disability syndrome brings on another problem, that of estimating how many children are affected by some form of it. Many children are simply labelled as "lazy," "spoiled," "undisciplined," "dull," or "slow learning." Others are said to have emotional or behavioral problems (Williams, 1971). Many children with severe problems are mislabelled, sometimes for life, as "retarded" (Wagner, 1971). These manifestations in most cases are the result of the disability rather than the cause.

The frequency of occurrence depends on terminology. Thompson (1966) concluded that 10% of school age children have a learning disability. Dr. Richard Carter, cited by Ellington and Cass (1966), believed that 20% of the children with normal intelligence suffer a reading disability severe enough to impede learning substantially. Crosby and Liston (1969) estimated that every year three to four million children enter the first grade with a learning disability. It is believed that eight to ten million elementary and secondary students have some form of a learning disability. If so, one out of every five children is affected (Pearse, 1969).

The percentage depends on the estimator's definition of learning disabilities and the place where he draws the line between normal and

severe conditions. When abnormality is restricted to those children who exhibit direct evidence of neuropsychological dysfunction, the estimated frequency is five percent or lower. If a more liberal estimation is given to include minor problems, the percentage rises to 20-25% (Bryant, 1972).

Whatever the definition and percentage advocated, the fact is that only a small percentage receives the help they need. Mrs. Martha Bernard of the Association for Children with Learning Disabilities was cited by Gribbin (1973) as estimating that "fewer than one percent of those known to need special learning instruction get it from the nation's public schools."

Purpose of the study

It was the purpose of this study to develop and evaluate the criterion-related validity of an instrument to measure the level of parental knowledge about the basic concepts of the learning disability syndrome. The hypothesis for validation was based on the assumption that professional workers in the field of learning disabilities have a better understanding of the basic concepts about the learning disabilities syndrome and will score significantly different from parents who either have their children under tutoring at the Center for Special Education or have brought them to the Center for diagnosis and consultation.

CHAPTER II

REVIEW OF LITERATURE

Parents of learning disabled children very quickly learn the many facets and frustrations of the syndrome. Since it is a relatively new concept on the educational scene, locating diagnostic and remedial help can be a long, drawn-out process. The longer the search the more frustrating to the parents, due not only to their failure to find an adequate answer, but because they begin to see the increasing frustration in their child as his self-confidence begins to deteriorate. The present review of literature will deal with some of the complexities of the problem in order to familiarize the reader with what the parents are trying to uncover in their quest. It is also intended to give a basis for the rationale of the questions developed for the questionnaire.

Symptoms

There are many symptoms that fall within the specific learning disabilities syndrome. Not all occur in the same child, nor does any combination or degree of severity need be similar in each child. Rome (1969) said, "Dyslexia (specific learning disability) is not an all or none phenomenon, it exists in varying degrees." Woodward

(1973) expressed in laymen's language the "tell-tale signs" of a learning disabled child:

> Reading: The child has trouble: (a) seeing likenesses and differences in pictures or words; (b) identifying different letters; (c) associating the letter sound with the printed letter; (d) hearing differences in the sound of letters; (e) seeing the difference between similar words (come-came); (f) reversing and inverting words, such as seeing "was" for "saw", "on" for "no", "quite" for "quiet".
>
> Writing and spelling. Trouble in: (a) copying correctly from blackboard or book; (b) transposing letters within words; (c) reversing numerals or letters; (d) coordination in forming letters, staying on lines, keeping letters same size; (e) mixing small and capital letters.
>
> Memory. Trouble in: (a) recalling spoken information in correct sequence and detail; (b) following spoken directions; (c) recalling accurately a prior visual experience and reproducing it on paper.
>
> Motor skills. (a) coordination - poor at games; child falls, trips, bumps into objects; (b) manual dexterity - tying shoelaces, buttoning, cutting paper or tracing objects (p. 109).

Kronick (1969) explained that the general problem behind these outward signs is the child's lack of ability to organize his inner self and the world about him. He is easily distracted by surrounding stimuli, to the point where he cannot attend to the one he is expected to. In the visual area, figure-ground problems cause a child to lose individual words in the midst of a page. They may also cause him to pick out insignificant items on the Picture Completion subtest of the WISC, because all parts of the picture carry equal weight in his

perception. The lack of organization hinders a child's generalizations of his visual impressions; for example, he may well distinguish a cat from a dog, but not a terrier from a collie. He may not make a connection between a puppy and an adult dog or even between a real dog and the abstract word-symbol for dog. This condition does not, however, indicate that a learning-disabled child cannot think abstractly. He is capable of abstract thought on individual topics such as God, love, loyalty, or patriotism, yet he may be unable to relate the concept used to work one algebra problem with the working of a similar problem. He may have a visual sequential memory problem; that is, each time he sees a word, it is a new experience. He will not remember how a spelling word looked in the past. A child with a visual motor problem, or dysgraphia, will be able to see the word, yet be unable to reproduce it on paper.

Auditory distractability problems are very similar. A child with an auditory figure-ground problem will attend to all sounds in the room equally, unable to tell when someone is talking to him. Auditory disassociation causes him to hear words as an unconnected series of sounds. Auditory perception problems cause him to confuse "sh" with "ch", "k" with "c" and "p" with "b." He may get a "coke" for his "coat". Auditory processing is the ability to comprehend ongoing language, to categorize it, and to produce the appropriate response.

He may understand the first few words of a command but be totally lost in the continuing barrage of sounds. He may also have a defect of auditory sequential memory which will not allow him to remember things he has heard.

A child who garbles his descriptions, enunciates poorly, uses poor grammar, or reverses the order of words has a defective expressive language function. One who forgets the names of words is called "amnestic aphasic" or labelled as one having an auditory retrieval dysfunction.

There are other terms used to describe a person who cannot organize or comprehend his own body. Mixed dominance refers to the failure of the body to establish a dominant side or unilateral function. Such a person may be ambidextrous. A cross-dominant person may be right-handed and-eared, and left-footed and-eyed. A midline problem hinders a person from crossing his body with a limb or an eye. For example, he may have trouble either reading across a whole line of print or hop alternately on his feet.

Gross motor problems refer to clumsiness in sports, walking, or skipping, while fine motor problems affect small muscles such as those in the eyelids or hands. There are other areas of difficulty as well such as eye-hand coordination, which could hinder a tennis swing or the threading of a needle. An apraxic or expressive motor problem hinders a child in making efficient bodily responses.

Spatial orientation refers to the correct concept of the size and shape of the body and the child's ability to function in space in relation to other bodies as well. Dyscalcula or acalcula is a difficulty with number concepts.

Perseveration pertains to a child who will use the same response repeatedly. Disinhibition is the inability of the child to concentrate on one relevant idea or stimulus when it is appropriate. Verbal disinhibition is speaking out on impulse on an irrelevant topic, interrupting a person who is talking, or disturbing a quiet classroom. Auditory disinhibition is the inability to concentrate on one conversation or set of sounds. Motor disinhibition is the child's inability to exercise control over his body when appropriate to do so; for example, he may unknowingly cross a street on a red light or touch everything in sight in spite of reprimand.

There is not just one unique syndrome of dyslexia (specific learning disability); there are only individually different causes with varying constellations of symptoms. Each has to be diagnosed separately (Klasen, 1973).

Perhaps the only common symptom aside from poor academic performance is an IQ in the normal to above-normal range in either a verbal or non-verbal measure (Johnson and Myklebust, 1967).

Etiology

The subject of etiology was perhaps best summarized by Ernest Willingberg in his foreword to Gearhart's book: "At this time there is still no classical or traditional position based on a rich heritage of research and time honored practice" (Gearhart, 1973, p. vi).

Gearhart then set forth a classification with two major systems: the educational and the medical. However, as one read through his chapters within each category, the weakness of such breadth is evident as neurological-oriented systems are grouped with environmental. Delcato (1966) classified etiology into three areas: (a) genetic, (b) traumatic, and (c) environmental (p. 29). Delcato, however, waived the possibility of a developmental approach or maturational lag by his emphasis on the genetic or hereditary aspect. Perhaps Klasen (1973) set down one of the most comprehensive, yet compact, classifications in literature.

1. Somatogenetic Dyslexia
    a. Functional: Neurological disorders in the organization or functioning of the central nervous system without evident or structural changes (EEG normal or only slightly and unspecifically changed).
    b. Constitutional: Inborn weaknesses without pathogenetic evidence, at least as far as today's diagnostic means allow determination.
    c. Hereditary: Familial tendency toward reading-spelling disorders of various manifestations in the absence of other evident causes or pathological signs.

d. Maturational: Delayed or arrested development of the nervous system, especially of its function, often accompanied by psychological immaturity in various areas of growth (especially often observed among prematurely born children).
e. Traumatic: Conclusively diagnosed traumata of the nervous system, organic changes, birth trauma, etc.

2. Psychogenetic Dyslexia

Neurotic conflicts, defenses or reactions, originating in inner psychic or social tensions.

3. Sociogenetic Dyslexia

Caused by social milieu, family, school culture, or similar social institutions and the limitations they may impose (pp. 178, 179).

Klasen prefaced the preceding classification by saying "It is based on the assumption that specific dyslexia constitutes a multietiological syndrome." The remainder of this chapter will combine and elaborate on this outline with the same multietiological approach, even though sections will be treated in isolation.

Pathogenetic Factors

The basic question which must be addressed in the functional and constitutional categories is that of pathogenetic evidences. The question centers on the degree of such involvement. Neurologists working with learning disabled children observed that they often exhibited symptoms similar to children who had observable brain damage through injury by accident or birth defect (short attention span,

hyperactivity, and perseveration). They postulated, therefore, that by injury or infection before or during birth, or in babyhood, the child's perception, thinking, and emotions involved in normal learning processes were impeded. However, no observable brain damage could be proved in all cases; therefore, the label was altered from brain damage to minimal brain damage. To indicate that more grave forms of brain dysfunction, such as cerebral palsy or epilepsy were not included, the term was further refined to minimal brain dysfunction, neurological impairment, and finally perceptually handicapped (Bryant, 1972; DHEW pub. No. [NIH] 71-153, 1971). Janski and deHirsch (1972) summed it up this way:

> The term minimal brain injury is frequently mentioned in connection with reading disability. There are reservations as to the use of this term, mainly because the diagnosis is an inferential one and the definition of the term varies from one clinical setting to another. Clinical evidence, however, does seem to indicate that "soft" neurological signs, that is, a variety of dysfunctions such as motility disturbances, perceptiomotor deficits, trouble with abstract functioning are frequently concomitants of reading disability (p. 9).

One of the pioneer neurologists, Samuel Orton, postulated that laterality and hemispheric dominance play a critical part in language acquisition. The eyes and ears carry impressions, signals, or perceptions over modalities of input to the cortex of the brain. There, integrations occur with coding, encoding, recognition, and countless

associations with past stimuli. Intelligence and integration play their roles before memory and the motor patterns can be recalled and carried over into modalities of output. When disorganization arises in these steps (neurophysiological dysfunction in an otherwise normal brain), the sequence of symbol and sound, which makes words that convey concept, is disordered. Thus, the impaired process of symbolization hinders learning by configurations, the result being a child who is hindered in his learning habits (Slingerland, 1965).

Orton's explanation for this dysfunction is concerned with cortical dominance. The cerebrum, largest and most superiorly located division of the brain, is divided into two hemispheres separated by the longitudinal fissure yet joined by the corpus callosum on the medial surfaces (Anthony and Kolthoff, 1971). Despite their anatomical similarity, the two hemispheres differ in functions. Brain research has shown that in the majority of people the language function of verbal expression, verbal understanding, reading, writing, and spelling, are located in the left hemisphere, while the right hemisphere usually affects spatial orientation, stability, and fluency of sequencing or gestalt perception (Klasen, 1973). Orton believed the cortex on one side of the brain is dominant over that of the other side in the choice of functions that can be carried out by one side of the body. He further said that the defects or lags in language development were

caused by a lack of, or lag in, one hemisphere establishing unilateral dominance (Thompson, 1966). This lack of dominance would cause each side to receive equal stimulation and no dominant-side habit of complete elision of the engrams would result; thus such a person could confuse "p" with "q," "saw" with "was," "b" with "d," and "not" with "ton" (Orton, 1937).

Dr. Bernard Sklar analyzed EEG patterns in normals and dyslexics and found that "the dyslexics showed less synchronization between the two hemispheres of their brains, more synchronization within each hemisphere and more theta waves" (Gardner, 1973). Dr. Norman Geschwind at Harvard examined the difference between the right and left planum temporal regions and found significant differences between the left (larger) and right sides (Geschwind, 1972).

Levy explained Special Learning Disability as a chemical disturbance in the brain stem, one that distorts the way the central nervous system processes information (Gribbon, 1973). With such a wide array of possibilities, Klasen's conclusion that the full complexity of the neurophysiological foundations of learning disabilities have not yet been recognized is reasonable.

Heredity and Maturational Lag

The significance of heredity as a factor related to specific learning disabilities is undecided. Klasen (1973) reported the range of

frequency data about hereditary involvement spread from 11% to 70%. She attributed this wide range to lack of agreement on what specific criteria should be employed for indicating hereditary involvement.

Because hereditary involvement is a recurring question in the counseling session with parents, two comments will be made. Heredity does have an involvement in the specific learning disability syndrome, the degree of which is yet undetermined (Klasen, 1973). Second, for some yet unknown reason, male children with a specific learning disability outnumber females four to one (Critchly, 1967).

Delayed maturation or impairment of intersensory transfer is believed to be a factor responsible for some cases of language disability. Bender (1957) based her understanding of "maturational lag" on a concept of functional areas of the brain and of personality which mature according to a recognized longitudinal pattern. Maturation is accepted as a process of growth that proceeds along a well-defined path with well-defined "milestones." When a discrepancy develops between the chronological age and the neurophysiological or neuropsychological development level of a child, maturational lag can be inferred (Ansara, 1969). Janski and deHirsch (1972) stated that perhaps this discrepancy can be viewed in the light of gender: "Among the superior immatures, the majority are boys. Most studies report that they retain this advantage through the lower grades" (p. 4).

Klasen (1973) quoted Lükert as saying that birth traumata are more frequent among boys because of their larger heads and the longer duration of their birth processes, and that such birth injuries affect the evolutionarily younger cells, the carriers of communicative, specifically language, skills. She also used birth trauma as a possible explanation for the relatively high occurrence of dyslexia in "only" children. They, not rarely, are born to parents who married late; thus there could be biological, genetic, or traumatic (perinatal) factors involved (p. 160).

Perhaps MacDonald Critchly in his opening address to the World Congress on Dyslexia in 1974 projected an answer that may harmonize not only the hereditary, maturational-lag aspects but the neurophysiological as well. He stated that current research is being done on the assumption that learning disability is caused by a lower than normal myelinization of the nerve sheath. If this assumption is borne out by research and if valid techniques of detection are developed, perhaps chemotherapy could be the ultimate remedy for a learning disability.

Psychogenetic Factors

Klasen's second major etiological classification is psychogenetic. This classification will be covered in three areas: (a) intelligence quotient, (b) psychocausal factors, and (c) psychoresultant factors.

Intelligence Quotient. The definition of specific learning disabilities used in this thesis indicated that the disabled child has a normal IQ. The IQ concept needs further attention because many parents have gross misunderstandings of the concept. Klasen (1973) said that

> general observation and research figures accumulated by investigators in a variety of places and countries clearly indicate that reading disability occurs in students with average, above or below average degrees of intelligence. Thus there is a disparity between language ability and mental ability. It can be assumed that language acquisition in the widest sense does not depend exclusively upon general intelligence, but also upon specific factors such as visual, auditory, motor, or verbal functions, and it is not contradictory at all that intelligent children present specific learning disabilities (p. 107).

One implication of importance drawn from this statement is that a learning disability is autonomous and capable of being superimposed on a brilliant, normal, or mentally retarded child. Johnson and Myklebust (1967) explained why the definition is limited to normal-range IQ in their explanation of the difference between a mentally retarded and a learning disabled child.

> In some of our studies we have followed this demarcation and, assuming evidence of a neurogenic involvement, included the 80 to 90 IQ group in the learning disability population. Though this may be advantageous to certain children, using the remedial procedures discussed in this volume, success with this group has been more limited. This should be expected because, though moderate, a large degree of mental

> retardation is present. Therefore for research purposes, and perhaps also for purposes of remedial education, the definition should be more stringent. It is our practice to consider "adequate" as meaning an IQ of 90 or above. If intellectual ability is below 90 IQ and if a learning disability is present, we define the problem as one of multiple involvement (p. 13).

They explain this success rate difference elsewhere by saying that the learning psychology of the mentally retarded child involves attaining a limited result with a limited potential, whereas in the learning disabled child the task is to remedially circumvent the learning disability so that normal or above-normal performance is realized. They also stress the need to utilize a measure of intelligence that indicates both a verbal and a non-verbal ability level. Mitchell (1972) further advised the use of a non-reading intelligence test such as the Wechsler series so that the person's reading disability will not misrepresent his general ability.

Klasen (1973) differentiated four Wechsler profiles for dyslexics:

I.	Significantly higher verbal IQ	22.3%
II.	Significantly higher performance IQ	18.9%
III.	Significant subtest variability	48.6%
IV.	No significant disparities	10.2%

She summed her discussion up as follows:

> Our concern should not be which of the IQ (verbal or performance) is a truer reflection of the total intelligence, but in which areas the individual child has strong points to build on and weak points to be strengthened (pp. 150-151).

Psychocausal factors. The effect of the emotional state of the child is much in question and difficult to ascertain. Klasen (1973) said that it never exists as an isolated symptom but is always accompanied by associated and/or secondary complications. Thompson (1966) said that in most instances tutors in learning disabilities considered emotional factors to be secondary to the language disability, sometimes seeing the direct result of the difficulty coexisting with it, and sometimes even augmenting it.

There are those who hold to the possibility of emotional factors as being the primary cause. An example of such a position is a dissociative "reading black-out" due to an avoidance reaction attributed to the sexual significance of the looking that reading involves. This "reading-black-out" is considered to be related to hostility toward the parent of the same gender and to an inadequate identification with this parent (Money, 1962).

These adherents to primary psychological causation are few, however. Most of the literature addresses psychological and emotional disturbances as secondary and a result of the learning disability. Klasen (1973) cited a study by Joss, Leiman, and Schiffman, in which the effects of various treatment methods were tested. Group I received reading instruction and psychotherapy, Group II received only reading instruction, Group III received only psychotherapy, and

Group IV was a control group. Their findings reported improvement in Groups I and II and none in Groups III and IV, indicating that psychotherapy alone does not elicit improvement (p. 97). Therefore, the possibility of a specific learning disability being caused solely by psychogenic factors appears remote.

Psychoresultant factors. Money (1966) believes that emotional disorders are almost inevitably a consequence of repeated frustrations. Rabinovitch said that "it is evident that children with marked incompetence in an area so vital to their ego attitudes and sometimes to their survival in today's world will suffer inordinately" (p. 78).

Rome (1971) traced the development of emotional problems in a child with learning disabilities through his self-concept. He said, "We are what we are, in part because our views of ourselves have been gotten from the way we see ourselves as mirrored in the eyes of others" (p. 65). Thus, the child, sees no difference between himself and other children until he begins school. His social development appears equal to others his age until he begins to see that he is having difficulty reading or spelling and cannot keep up with his classmates. He sees he is different and begins to question how to handle such problems as: Should he display or not display, tell or not tell, lie or not lie? With each new contact he makes, this dilemma faces him. It becomes his life-pervading problem, how to manage this difference,

how to avoid being discredited in a social setting, how to explain it should he be discovered. He lives in constant anxiety brought on by his insecurity, inferiority, and helplessness. Should he reach adolescence before the problem is discovered he has personality warping. He has less confidence in himself, especially in new situations. He is shy, timorous, hesitant, never volunteers, and tends to hide on the periphery of social groups. He becomes chronically tense, with the tension reflected in some organ system of the body. Perhaps "butterflies" in the stomach, hyperventilation or fainting spells, chronic loss of appetite or stomachache, headaches or neck muscle spasms, and a high incidence of hysterical eye-symptoms covering his inability to read. Rome (1971) also cited a body of accumulating evidence which indicates that a significant number of juvenile delinquents have reading problems. The hypothesis arising from the evidence is that when society extrudes them, they have a need to prove themselves and act out this effort in aggressive, predatory behavior on that society.

Sociological Factors

Waugh and Busch (1973) spoke of educational retardation in terms of cultural deprivation and of teaching practices. In this section a third factor, that of parental attitudes, will also be included.

Socio-economic factors. In the area of cultural deprivation the literature appears to agree with Waugh and Busch (1973) that the specific learning disability is in addition to and not caused by the cultural deprivation. Klasen (1973) summed her review as follows:

> Environmental factors seemed to contribute the least to the learning problems in our sample. No significant correlations were found between socio-economic family situation and specific dyslexia; none were observed with regard to working mothers, completeness of family, sibling rivalry, or birth order. Only the percentage of adopted children in our group was strikingly higher than in the general child population. This was explained not in terms of the particular emotional, intellectual, and economical constitution of adoptive families. These observations confirmed what several other researchers thought they had observed, namely, that environmental factors are only of indirect and secondary importance in the causation of specific dyslexia (p. 177).

Thompson (1966) expressed the same contributory function of environmental factors and cited the Group for the Advancement of Psychiatry as stating that:

> social factors, such as physical and psychological deprivations are also important in the etiology of mild mental retardation. Current studies on deprivation indicate that it is impossible to develop normally if there is inadequate emotional and intellectual stimulation . . . psychological factors that can cause a child to function on a mentally retarded level range from severe anxiety to early infantile autism. The developmental history of such children gives evidence of original intellectual potential, but the longer the psychological stress continues, the more the child may become indistinguishable from those with biological mental retardation (p. 95).

He quoted McCready as saying that "these children (learning disabled) may eventually become feebleminded by deprivation unless their condition is exactly recognized and proper treatment instituted" (p. 95, footnote #3). Dyslexia is a prominent factor in illiteracy and school dropouts, both of which play an important part in unemployment. Unemployment, in turn, is a basic cause of poverty. Thompson (1966) diagrammed it as follows: dyslexia → reading retardation → illiteracy → dropouts → unemployment → poverty (p. 99). Thus, the effects of cultural deprivation add to the specific learning disability.

Perhaps Bannatyne (1971) gives some added insight into the causal effect of socio-economic factors in learning disability problems by saying that the motivational attitudes of the child, teacher, and family have a direct bearing on the child's achievement. Education involves more than content and how to learn; it involves also the desire to learn and want to continue learning.

Teaching practices. Thompson (1966) made two comments on teaching practices and their relationship to learning disabilities. The first pertains to the question of phonics versus the "look-say" approach. He said that

> although they (teachers of remedial reading) do not claim that any method of teaching is the basic cause of reading disability, they have found through experience that about 25 percent of all children with reading disability progress when phonics are

> combined with other sensory modalities, and that practically all children profit by and enjoy the knowledge of word make-up and the origin of sound in language (p. 94).

His other comment is on the allegation made in the 1963 Encyclopedia of Mental Health, that the main reason why public school children were having difficulty with reading was the overcrowded classroom situation. He concluded that in view of the clinical picture of learning disabilities with all its characteristics, crowding is not a causal factor. Once again the stress is on the child's innate endowments which bring about the disability; the environmental factors add to, or, if structured properly, reduce the difficulty.

Parental attitudes. The last area to be discussed is that of parental attitudes. Here again the emphasis in the literature, aside from the genetic and traumatic elements already discussed, is the supportive or non-supportive role of the parents. Children with a specific learning disability are defeated emotionally by their lack of achievement and their own confusion as to how to handle their problem. They need support and understanding from their parents. Klasen (1973) discussed six non-supportive attitudes many parents have: (a) Overanxious, overprotective, and worried parents may be projecting a reflection of their own feelings of insecurity and guilt. They are constantly asking teachers, physicians, psychologists, and

other parents for advice to satisfy their own neurotic needs. Klasen said that this is detrimental to the child in that he remains dependent, immature, and threatened by the world. (b) Rejecting parents may label their child as "lazy" or "irresponsible." Klasen said the attempts to lay the total blame on the child arise out of the child's constant failure and the parents' feelings of inadequacy to cope with him. (c) Overly demanding and punitive parents are highly authoritarian, living under great stress for survival and fear of the future. Their own security is threatened by their child's failure and they resist altering their plans to accommodate his need for special help. The child under this pressure to conform to their rigid ideas develops neurotic defenses. (d) Cold and critical parents are emotionally detached from their child. Nothing the child does is good enough. If he makes a "B," they want an "A". Klasen believes before any reading therapy can be effective with the child, the parents need to be counseled toward more emotional involvement with the child. (e) Unrealistic parental ambitions for the child to attend college are spurred on by the changing national pressure on the need for post-high school education. The parents realize the need and reject any idea that their child is not capable of doing college work. They blame teachers, teaching materials, childhood disease, or anything else that will avoid the heartache of the lack of ability which might reflect

on them. (f) Indifferent and distant parents is another type of uninvolved parent, often from the higher socio-economic strata. They have given the child everything but love and personal attention. Here again Klasen's prognosis is poor, because money cannot buy the parental warmth these children need before remedial help can be effective. She closed her discussion by showing that the therapeutic value is greater when both parents are involved with the child.

Conclusion

Learning disabilities are identified by a lower level of academic achievement than would be expected from the individual's intellectual capacities when there are no physiological or gross neurological impairments. The lack of achievement causes parents to react in many ways depending on their level of understanding of the relationship between intellectual capacity and academic achievement. With a poor understanding of the problem, parents may react in a way detrimental to the child's remedial success. As they pursue their search for an adequate answer they uncover certain factors in a complex, multietiological syndrome. Each new insight elicits hope at first, followed by added anxiety if the problem is not overcome by a one-pronged attack on the newly uncovered factor.

This review of literature has dealt with the complexity of the syndrome of learning disabilities to give the reader a taste of the

perplexity that concerned parents can develop in their search. It is also intended to give the basis for the content of the questions used in the instrument for the survey of parents' concepts of learning disabilities.

CHAPTER III

PROCEDURE

It was the purpose of this study to assess the criterion-related validity and internal consistency of an instrument to measure a parent's conceptual understanding of the syndrome of specific learning disabilities. Such an instrument would expedite the initial interview by determining the extent of knowledge of the parents about specific learning disabilities.

The plan for gaining criterion-related validity of the instrument was to use three "known" groups: professionals who know the specific learning disability syndrome; parents whose children have been in a tutoring program for specific learning disabilities; and parents who are being interviewed for the first time about their children's potential learning disability. Validity was expected to be established if the professional group scored significantly different from either of the other two groups.

Subjects

The subjects participating in this study represented three major groups. The first group was composed of 39 professional and semi-professional workers in the field of learning disabilities. The

professionals were specialists in specific learning disability, with from one to 20 years of experience with children having learning disabilities. The educational background of the semi-professionals, who were all Salem College interns in learning disabilities, included completion of six semester hours of learning disability theory and remedial methods and the special subject requirement for the learning disabilities certificate. Two-thirds of the professional-semi-professional group were staff members or interns at the Center for Special Education, Salem College. The other third of the professionals were participants in a number of in-service workshops on specific learning disabilities held by Dr. Lucia Karnes at both Asheville and Charlotte, North Carolina; and Charleston, South Carolina.

The second group of subjects consisted of 25 parents whose children had been tutored at the Center for Special Education for at least two semesters. Their educational background varied from high school courses to college graduates. Their occupational background ranged from that of a laborer to that of a professional person. They were aware of some aspects of the specific learning disability syndrome through diagnostic consultations with Dr. Karnes before their children were accepted for tutoring, conferences with the tutors about their children's problems, and parent meetings held throughout the school year.

The third group of subjects consisted of 44 parents who had recently brought their children in for psychological and educational evaluations to three centers: The Center for Special Education, Salem College, Winston-Salem, North Carolina; Charlotte Country Day School, Charlotte, North Carolina; and the Trident Academy, Charleston, South Carolina. Their educational and occupational ranges compared with those of the second group.

Development of the Instrument

Rothbard (1972) determined four basic areas of parental anxiety from taped parent conferences: (a) intelligence, (b) how to help the child, (c) the child's self-concept, and (4) the etiology of the problem. For the purpose of anticipated subscale development these findings were reclassified as (a) intelligence, (b) parental concerns, (c) child's self-concept, and (d) achievement. The change from "etiology" to "achievement" in the fourth category was made on the assumption that parents often view low achievement in school as being causal rather than resultant and would attribute such low achievement to factors other than the etiological roots.

An initial list of 140 items was constructed in the four category areas, for example: (a) intelligence, "His IQ is below normal;" "His IQ doesn't seem to be keeping up with his age;" (b) parental concerns, "I don't know how to help my child;" "I have not helped my child enough

with his school work;" (c) child's self-concept, "My child's classmates make fun of him;" My child is afraid of new situations;" (d) achievement, "My child can't stay within the lines when he colors;" "My child is a poor speller."

The list of 140 items was given to 26 professionals and semi-professionals from the Center for Special Education at Salem College, with instructions to evaluate each item in light of their experiences with parents. They were instructed to answer on a "yes", "no" basis its relevance for inclusion on an intake evaluation sheet to be used when the parents bring their children for diagnosis. They were also instructed to place each item in one of the four categories: (a) intelligence, (b) achievement, (c) parental concerns, and (d) child's self-concept. Finally they were asked to give what they regarded as the correct answer to each item on a four-point rating scale (strongly agree, mildly agree, mildly disagree, strongly disagree). They were also encouraged to note comments or wording difficulties on the sheets.

Several comments, both written and oral, were received from 13 of the 26 professional-semi-professionals from Salem College. They indicated confusion in the category placement section as well as concerns about their basis for answering the items as professionals, because the items appeared too symptom-oriented. Thus, only the

content material that was determined useful for an intake questionnaire by a 75% "yes" response was retained for future use.

The respondents' indicated that the category "intelligence" was too restrictive and that a broader category was needed to accept a wider range of abilities. The "intelligence" category was accordingly changed to "aptitude" to add this breadth. These professionals also indicated that they felt "etiology" was a better category title for their frame of reference than "achievement", so this change was made as well. A "no category" choice was also added.

These professionals also indicated that the items were too specific in regard to symptoms and did not reflect an area of parental reasoning, for example: The item, "He mixes 'b' with 'd' and 'p' with 'q' was too specific. Thirty-two of the items were reworded to reflect the parental reasoning behind the symptom, for example: "He mixes 'b' with 'd' and 'p' with 'q' because he is sloppy." The reworded items were all designed to be answered correctly at the "disagree" side of the scale. Sixteen of the original symptom-type-only items yielding an "agree" response were retained and randomly inserted into the test to counterbalance passive response bias. These 16 symptom-type-only items were scored in reverse for purposes of statistical analysis. The total number of items on the second form was 48.

The revised 48-item survey was then administered to the original 13 professional-semi-professional respondents from Salem College and to an additional 13 professionals attending the in-service workshops on learning disabilities held by Dr. Lucia Karnes. The subjects were instructed to place each item in one of the five categories: (a) aptitude, (b) parental concerns, (c) child's self-concept, (d) etiology, and (e) no category. They were also instructed to circle either "strongly agree," "mildly agree," "mildly disagree," or "strongly disagree" on the basis of their knowledge of the causal factors of the specific learning disability syndrome.

The 48-item test was also administered to the 25 parents whose children were being tutored at the Center for Special Education, Salem College, and to the 44 parents who brought their children in for diagnosis at one of the three locations. These two groups of parents were instructed to circle either "strongly agree," "mildly agree," "mildly disagree," or "strongly disagree" on the basis of their perception of the child's problem. The results of this three-group administration were used for statistical analysis to determine the validity and reliability of the instrument.

CHAPTER IV

RESULTS AND DISCUSSION

The purpose of this study was to develop and to evaluate the validity of a paper and pencil instrument for the measurement of the level of parental understanding of the basic concepts of specific learning disabilities. The instrument was designed to be used in the initial counseling session with parents whose children were being evaluated for a specific learning disability. By determining the amount of each parent's understanding of the basic concepts of specific learning disabilities, the interview would be expedited.

The design for gaining criterion-related validity was to use three "known" groups: professional-semi-professionals who were familiar with the specific learning disability syndrome; parents whose children had been in a tutoring program for specific learning disabilities; and parents who were being interviewed for the first time about their children's possible learning disability. Validity was expected to be supported if the professional group scored significantly different than either of the other two groups.

In summary, an initial list of 140 items was developed. Each item's content was evaluated by the professional group for it's usefulness in an intake interview questionnaire. The material accepted

by the professional group was reworked into a 48-item test. The 48-item test was then administered to each of the three groups.

As will be seen, chi-square tests were used with each item to determine the significance of the differences between the groups. The group of significant items was then tested for internal consistency by the Kuder-Richardson Formula 21.

Results

Kerlinger (1973) set forth two types of validity: (a) content validity dealing with the representativeness of the test material; and (b) criterion-related validity comparing the test with some external factor which is known or believed to measure the attribute under study. The results bearing on these two types of validity are reported below.

Content Validity

The content validity was ascertained by asking 26 members of the professional-semi-professional group from Salem College to evaluate each of the original 140 items on a "yes", "no" basis as to its value for an intake evaluation sheet to be used when parents enter the Center for Special Education for their child's first evaluation. Items deemed of value by 75% of the 13 professional-semi-professional subjects from Salem College who responded were retained for use in the second form of the test. Of the original 140 items, 48 were retained

and used for further administration and statistical analysis.

Criterion-related Validity

Payne (1968), in his discussion of criterion-related validity, stated that "descriptive indices derived from contrasted groups known to differ on the variable being measured would bear on validity claims" (p. 125). It was postulated that the lack of understanding of concepts basic to the specific learning disability syndrome would be significantly different for the professional-semi-professional group, the parents with children being tutored and the parents entering for their child's first diagnosis. A preliminary determination of such a difference was established by utilization of a 3x2 chi-square test among the three groups to test the following null hypothesis: There is no difference of the response percentage levels among (a) the professional-semi-professional, (b) the parents with children being tutored, and (c) the parents with children being evaluated.

The four response classes (strongly agree, mildly agree, mildly disagree, strongly disagree) were combined for reasons to be discussed later, into an "agree," "disagree" format. The computer program utilized Fisher's Exact Test to construct the probability and significance levels, which allows analysis of cells having fewer than five responses. Thirty-eight items were accepted at the .05 level, while 10 items were rejected.

The 3x2 test indicated that there was a significant difference of response among the responses of the three groups. It did not, however, indicate between which group the difference occurred. Therefore a 2x2 chi-square test was calculated for each item to determine the significance of the response difference between the professional-semi-professional group and the parents with children being evaluated for the first time, again in terms of an "agree," "disagree" format. The computer program again calculated chi-square by use of Fisher's Exact Test of probability. It should also be noted that the Yates correction was used on the 2x2 tests.

Responses of these two groups to 34 of the 48 items were significantly different at the .05 level. These "disagree" response percentages and significance levels are found in the 48 item test as shown in Table 1. The significant difference ($p > .05$) responses between the "known" groups of (a) professionals and (b) the parents with children being evaluated supported criterion-related validity for 34 items.

Reliability

Anastasi (1961) stated that item analysis is useful only when the item pool measures a single trait. If a single trait is not present then subscales of homogenous content material should be developed. The original design included procedures for developing subscales

Table 1

Disagree Response Percentages of Professionals and Parents with Children being Evaluated

Item	Prof.	Par.	Sig.
1. His handwriting is poor because he won't try to improve it.	92.3	48.8	.001
2. He is easily distracted because he won't apply himself.	96.2	16.3	.001
3. He mixes b for d and p for q because he is sloppy.	100.0	76.3	.05
4. His IQ doesn't seem to be keeping up with his age.	86.4	45.2	.01
5. His problem is caused by the rejection of his classmates.	92.3	72.7	N.S.
6. He is just lazy when it comes to school work.	100.0	41.9	.001
7. He tends to be very clumsy because he doesn't care.	100.0	71.9	.05
8. He cannot spell from dictation because he doesn't pay attention.	100.0	63.6	.001
9. His teachers have not helped him enough.	52.0	52.4	N.S.
10. He only remembers what he wants to remember.	96.2	34.1	.001
11. We didn't encourage him enough.	84.6	59.1	.05
12. Terrible temper tantrums interfere with his school work.	53.8	79.5	.05

Table 1 - cont'd.

Item	Prof.	Par.	Sig.
13. His drawings are poor because he doesn't take his time.	92.3	69.0	.05
14. He does better when asked questions than when reading them because he pays more attention.	65.4	15.9	.001
15. He is careless in his attitude toward school work.	72.0	25.0	.001
16. Perhaps his IQ is below average.	66.7	70.7	N.S.
17. He seems inattentive toward schoolwork, especially reading and spelling.	36.0	27.9	N.S.
*18. He reads or spells words backwards or with letters reversed.	100.0	33.3	.001
*19. He can do arithmetic but not use it in a practical situation.	87.5	56.8	.05
20. Poor speech has caused him to do poorly in school.	34.6	88.6	.001
*21. He can't stay within the lines when he colors.	75.0	27.9	.001
*22. He doesn't seem to understand what is said to him.	84.6	37.2	.001
23. He tends to be very active and doesn't pay attention.	23.1	40.9	N.S.
24. I didn't help him enough before he started school.	84.6	61.4	N.S.
*25. He does arithmetic on his fingers.	78.3	60.5	N.S.
26. He doesn't seem to understand what he reads because he doesn't concentrate.	92.3	26.2	.001

*Equals anticipated "agree" response scored as "disagree".

Table 1 - cont'd.

Item	Prof.	Par.	Sig.
27. His preschool learning environment was not as good as others his age.	84.6	75.0	N.S.
*28. He is very active and therefore doesn't finish his work.	40.0	56.8	N.S.
29. His drawings are poor because he's always in a hurry.	84.0	52.3	.01
*30. One or both of his parents had a learning problem in school.	92.3	54.5	.002
31. We have expected and pushed too hard.	46.2	63.6	N.S.
32. He lacks discipline in applying himself to a task.	50.0	16.3	.001
*33. He has trouble telling the names of colors.	42.9	4.7	.001
*34. He has trouble putting his thoughts into words.	96.2	59.1	.01
*35. He feels unsure of himself when asked to read out loud.	96.2	72.7	.05
*36. His birth was difficult, premature or late.	85.7	48.3	.01
*37. He is called names by his classmates because of his difficulty in learning.	84.0	28.6	.001
38. We have not helped him enough with his schoolwork.	84.6	70.3	N.S.
*39. He feels defeated because he has never done well in school.	100.0	66.7	.01

*Equals anticipated "agree" response scored as "disagree".

Table 1 - cont'd.

Item	Prof.	Par.	Sig.
40. He confuses vertical with horizontal because he is sloppy.	100.0	84.6	N.S.
*41. He seems to feel inferior to his classmates.	96.2	54.8	.001
42. He dreads school and just won't try to do better.	46.2	73.2	.05
*43. He fears new situations because of his poor school work.	96.2	52.5	.001
44. His present schoolwork indicates his future possibilities will be limited.	61.5	34.1	.05
45. He will eventually grow out of his difficulty in school.	92.0	47.6	.001
46. His learning difficulty may be caused by a physical problem.	50.0	46.3	N.S.
*47. He is a poor reader just like some other member of the family.	84.6	36.6	.001
48. Something must be wrong with the schools since his preschool development appeared the same as other children his age.	88.5	81.0	N.S.

*Equals anticipated "agree" response scored as "disagree".

within the total test based on the complexity of the specific learning disability syndrome. Also the fact that each child does not elicit each symptom to the same or to any degree, would cause individual parents to score items differently depending on their child's specific case history. Interitem reliability between each subscale item and subscale total test score was planned, but difficulties with the categories and their implications led to the abandonment of this portion of the construction. Reliability was then measured with the Kuder-Richardson Formula 21 for internal consistency of the total test.

The internal consistency coefficient of the 34 significant items from the 2x2 chi-square test between the professional group and the parents with children being evaluated was .68. For the purpose of assessing reliability, the Kuder-Richardson test was calculated on the responses of all three subject groups. The inclusion of the parent group whose children were being tutored was justified on the basis that the final 34 items from the 2x2 chi-square were also significant on the 3x2 chi-square test.

The coefficient of internal consistency for each of the subject groups separately was also calculated with the following results: professionals, $r = .65$; parents with children being tutored, $r = .52$; and parents with children being evaluated for the first time, $r = .41$.

Description of the Final Form

The 34 items found significant by the 2x2 chi-square test between the professional-semi-professional group and the parents whose children were being evaluated for the first time were arranged into the final form of the test and are found in Appendix A.

Discussion

The 34 items significant at the .05 level indicated that there was a difference in the responses to those items between the professional-semi-professional group and the parents whose children were being evaluated for the first time. It was postulated that the difference in response percentages would indicate a difference in the understanding of the basic concepts of the specific learning disability syndrome. The discussion of the results will deal with both the significant items and the non-significant items. The scoring rationale and the reliability of the instrument will also be discussed. The results discussed represent only one three-group administration of the test. Cross-validation is necessary to further support the findings.

Significant Items

The discussion of the 34 significant items will deal with the items indicating parental reasoning about their child's problem and the symptom-oriented items.

Parental-reasoning items. The parental-reasoning items being discussed are found in Table 1, listed without an asterisk (*). Eighteen of these items (1, 2, 3, 4, 6, 7, 8, 10, 12, 13, 14, 15, 20, 26, 29, 32, 42, 45) appear to deal with the parents' lack of understanding of the basic ability concepts of the specific learning disability syndrome, for example; item 2, "He is easily distracted because he won't apply himself." The professional group "disagreed" with this item because one possible factor of the specific learning disability syndrome is a child who is easily distracted, not because he won't pay attention, but because he attends to all stimuli equally. The parents who were naive as to this specific learning disability factor attributed the distractability to the child's attitude.

Further examples are items 1, 7, 13 and 29 dealing with the child's poor drawing, writing, or body movements. The parents attributed this to the child's attitude but the professionals indicated they understand that the root of the problem is the child's poor motor coordination.

Two of the parental-reasoning items (11, 44) deal with the parents own concerns. Item 11 indicates that the parents could have averted the problem if they had encouraged the child more. The professionals indicated that the specific learning disability syndrome required specialized help in addition to parental encouragement. Item 44 indicates that the professionals have seen children with a specific

learning disability achieve goals similar to children not hampered by a learning disability. The parents, however, appear to be pessimistic about their children's success.

Symptom-oriented items. Fourteen symptom-oriented items were significant and are shown in Table 1 with as asterisk (*). Seven of the symptom-oriented items (18, 19, 21, 22, 30, 33, 34) appear to deal with the child's abilities. For example, item 18 deals with the reversing of letters. The professional group unanimously agreed with this item, but only 33% of the parents indicated that their child exhibited a reversal tendency. This indicated that the reversal problem is not a universal characteristic of the learning disability syndrome.

Symptom-oriented items 35, 37, 39, 41, 43 tend to deal with the child's self-concept. For example, item 37 attributes name-calling by classmates to the learning difficulty. The professionals have seen learning-disabled children who believe that they really are "dumb" or "stupid" and therefore cannot do the work. The parents by answering significantly differently may be indicating that they also believe that the child is incapable of better work.

The symptom-oriented items 36 and 47 deal with parental concerns. Item 36 indicates that the parents with children being evaluated for the first time did not believe the birth process had a direct bearing on the child's problem, while the professionals were aware of the

possible influence of birth irregularities. Item 47 indicates that the parents with children being evaluated did not attribute the child's low achievement to previous parental school problems. The professionals, however, understood the effects of hereditary involvement in the learning disability syndrome.

Non-significant Items

The discussion of the 14 non-significant items will deal with the items indicating parental reasoning about their child's problem and the symptom-oriented items.

Parental-reasoning items. The 14 parental-reasoning items that were rejected can be grouped for discussion purposes into three basic areas of content. Items, 5, 9, 24, 27, 31, 38, 48 tend to project the child's problem on others, either school teachers, classmates or parents and represent 70% of the items revealing this projection. This lends support to the findings from the review of literature that the environment has a secondary effect in conjunction with the specific learning disability and is not a primary causal factor.

While much of this projective element was not significant by analysis, three questions were acceptable and further support the findings from the review of literature dealing with environmental involvement. Items 30 and 47 reflect the hereditary involvement of the

syndrome, while item 11 deals with the lack of parental involvement found by Klasen (1973).

The second group of rejected items (17, 23, 40) deals with the question of distractability and attention span. Two of the items (17, 23) were agreed with by both groups, and item 40 was disagreed with. It appears that the distinction between agreement and disagreement of similar content is that item 40 contained the element of directionality included with the possible parental reasoning of sloppiness. This is clearly an inadequate item in that it is difficult to discriminate between sloppiness due to physical problems, maturational lag, attitude, inattention, or a discrete directionality problem.

The last two items rejected deal with innate problems in the child. Item 16 deals with the child's IQ level being below average. This wording was perhaps too blunt since item 4 covered the same content and was accepted. Item 46 indicates the disability to be of physiological causation and was disagreed with strongly by both groups. The professionals would reject physiological causation by definition of a specific learning disability, while the parents probably had been to medical doctors or other specialists before coming to the center for a psychological and educational evaluation.

Symptom-oriented items. Fourteen of the sixteen symptom-oriented items were responded to significantly differently. The two

items rejected (25, 28) deal with counting on the fingers and hyperactivity. The response percentages for item 25 indicated that both parents and professionals tended to disagree on the question. The Center for Special Education deals primarily with reading and spelling which might explain the professionals' negative responses. The parents may be indicating that this is not present in their child, that they do not believe it is a causal factor, that their concern for reading and spelling is greater than for arithmetic, or a lack of understanding that the underlying cause of such a symptom is distractability and short term memory problems causing the concrete use of the fingers.

Item 28 concerns itself with hyperactivity causing work to be left incomplete. The response percentages indicated that 60% of the professionals believed this to be of importance while only 43% of the parents believed likewise. This was not a significant difference, perhaps indicating that the parents at this point believed there was something more than just overactivity causing their child's problem.

Scoring Base

Kerlinger (1973) stated that independent type rating scale items are economical from the standpoint of the amount of information retrieved for the amount of time spent, and they lend themselves to statistical analysis. They do, however, lead to response bias.

Forced choice items avoid some of the response bias, but can cause strain on the respondent's patience and endurance resulting in less cooperation. Due to the already anxious situation for the parents, the less stressful rating scale was utilized. The items were constructed with a four point rating scale (strongly agree, mildly agree, mildly disagree, strongly disagree). These four response categories were collapsed into an "agree, disagree" format for statistical analysis.

The scoring base for the 48-item test was designated at the "disagree" end of the scale. All items with an anticipated "agree" response by the professionals were reversed for all three groups. Two of the 34 accepted items needed to be reversed after analysis. Item 20 indicated that its rating should be reversed, with65% of the professionals agreeing with the question.

Item 33 was one of the symptom-oriented items with an anticipated response of "agree" to be scored as a "disagree". Since 57% of the professionals agreed with the question, because of the reverse scoring they were in actuality disagreeing. This item should be deleted from the reverse scoring list as shown in Table 1 and scored with the disagree base.

Items 32 and 42 could be left as "disagree" until further review indicates otherwise on the basis of their 50% and 53% respective "disagree" response percentages.

Items 12, 32, 33, 42 should be watched closely in subsequent studies to determine if the small "agree-disagree" response percentages within the professional group are not causing an artificial significance between the professional and parent groups.

Reliability

The original test design included a subscale development, having the professional-semi-professional group place each item into one of four content areas developed from Rothbard (1972). The original categories were (a) intelligence, (b) achievement, (c) parental concerns and (d) the child's self-concept. The 75% criterion level was used to place items into categories, but there seemed to be some question as to the definition of the categories.

In the development of the second form the categories were slightly altered to include (a) aptitude, (b) parental concerns, (c) child's self-concept, (d) etiology, and (e) no category. Once again only the professional-semi-professional group was asked to place the items in categories. Again there appeared to be confusion over the distinction between etiology and aptitude, this time with only 19 of the 48 items meeting the 75% criterion level.

It was decided to abandon the subscale development until further refinement could be made in naming and describing the categories.

Perhaps the four-category distinctions determined by Rothbard from parent conferences are not considered to be distinctive by the professional group, or parental concerns are not distinguishable by the selected content areas of specific learning disabilities.

The internal consistency coefficient, determined by the Kuder-Richardson Formula 21, for the 34 item test found in Appendix A was .68. Although this coefficient is not considered to represent a high degree of reliability, it must be noted that the construct of the test is based on the assumption of variation between the three groups of subjects and that the content material of the test is diverse in nature. The Kuder-Richardson coefficient of reliability assumes the homogeneity of the test material. Roscoe (1969) said the Kuder-Richardson formulas underestimate the reliability when the test measures more than one dimension.

The internal consistency coefficients were also calculated for each of the three subject groups separately. The coefficients were these: professionals, $r = .65$, parents with children being tutored, $r = .52$, and parents with children being evaluated for the first time, $r = .41$. The linearity of these coefficients may support the basic assumption that the professionals are more knowledgable of the syndrome of specific learning disabilities and therefore responded more consistently to the test items. The parents with children being tutored were less

knowledgable of the specific learning disabilities syndrome and therefore were less consistent in their responses to the test items. The parents with children being evaluated for the first time were the least knowledgable and therefore responded least consistently.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Specific learning disability is a multi-etiological, multisymptom syndrome. Parents who have a child with such problems usually face a most difficult and trying time attempting to isolate their child's problem and finding remediation. In many cases they have been to pediatricians, ophthalmologists, and hearing specialists; have pleaded with school authorities; and perhaps have even tried psychotherapy for their children, all to a large degree without success.

The syndrome has three general elements: somatogenetic, psychogenetic, and sociogenetic. Somatogenetic deals with constitutional, functional, hereditary, maturational and traumatic aspects in the child's life. This is by far the largest contributor to the problem and is considered by many writers to be the only causal factor. The psychogenetic and sociogenetic elements are considered by most writers to be contributing factors.

The Center for Special Education at Salem College, Winston-Salem, North Carolina, is a clinic established for the diagnosis and remediation of specific learning disabilities. It was found through parent conferences that parents exhibit various concerns and levels of concerns about their children's problem. It was the purpose of

this study to develop and evaluate the validity and reliability of an instrument to measure a parent's conceptual understanding of the syndrome of specific learning disabilities.

The hypothesis in the test development was that professionals and semi-professionals (Salem College Special Education Certificate students) would score significantly different from parents whose children were attending the tutoring program of the Center and parents whose children were being evaluated for the first time for a specific learning disability. A total of 95 subjects, 26 professional-semi-professional, 25 parents with children being tutored, and 44 parents with children being evaluated were eventually used in the study.

The content validity analysis showed that 48 items of the original 140 were judged acceptable by 13 professionals. The 48 items were then refined and this instrument was given to the three groups for testing the difference in their knowledge of concepts about specific learning disabilities.

The criterion-related validity was determined by a 2x2 chi-square test between the professionals and parents with children being evaluated for the first time. Thirty-four items were retained because there was a significant difference in response percentages between these two groups. The resulting form of the questionnaire was then subjected to the Kuder-Richardson Formula 21 for an internal

consistency measure. The total test correlation coefficient for all three subject groups was .68. This, perhaps, reflects the multi-etiological-multi-symptom nature of the specific learning disabilities syndrome in that each child's problem will be autonomous and therefore each parent's responses will vary.

Conclusions

1. There is a significant difference in the conceptual understanding among professional-semi-professionals, parents with children being tutored, and parents with children being evaluated in several content areas of the specific learning disability syndrome.

2. An empirically valid and moderately reliable instrument can be developed in the specific learning disability syndrome to evaluate the parental level of understanding.

3. The classification of parental concerns determined from parental conferences may not be similar to the content areas determined by the professionals.

Recommendations

The construct validity of the test was not fully determined by the depth of this study. The basic construct however was supported in that the 3x2 chi-square which indicated a significant difference between the three groups as predicted. Future refinement might justify the

assumption needed for interval data and test this construct with more powerful parametric statistical analysis to determine if there is a significant linear relationship among the three groups. Factor analysis might also be utilized to determine the subscales according to content. The possibility also exists to correlate certain double-ended items (11, 24, 31, 38) eliciting parental feelings with either response, with an anxiety scale to determine if they might yield an anxiety factor. Further reliability studies are also recommended for internal as well as external reliability. Cross validation, using a different set of subjects, is recommended to add a greater support for the validation of the instrument found in this study.

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APPENDIX A

SURVEY OF PARENTS' CONCEPTS OF LEARNING DISABILITIES

SURVEY OF PARENTS' CONCEPTS

OF LEARNING DISABILITIES

Please indicate by a circle around the appropriate statement the strength of your belief that the following statements may be the reason for your child's poor school work.

1. His handwriting is poor because he won't try to improve it.
   strongly agree mildly agree mildly disagree strongly disagree

2. He is easily distracted because he won't apply himself.
   strongly agree mildly agree mildly disagree strongly disagree

3. He mixes b for d and p for q because he is sloppy.
   strongly agree mildly agree mildly disagree strongly disagree

4. His IQ doesn't seem to be keeping up with his age.
   strongly agree mildly agree mildly disagree strongly disagree

5. He is just lazy when it comes to school work.
   strongly agree mildly agree mildly disagree strongly disagree

6. He tends to be very clumsy because he doesn't care.
   strongly agree mildly agree mildly disagree strongly disagree

7. He cannot spell from dictation because he doesn't pay attention.
   strongly agree mildly agree mildly disagree strongly disagree

8. He only remembers what he wants to remember.
   strongly agree mildly agree mildly disagree strongly disagree

9. We didn't encourage him enough.
   strongly agree mildly agree mildly disagree strongly disagree

10. Terrible temper tantrums interfere with his school work.
    strongly agree mildly agree mildly disagree strongly disagree

11. His drawings are poor because he doesn't take his time.
    strongly agree mildly agree mildly disagree strongly disagree

12. He does better when asked questions than when reading them because he pays more attention.
    strongly agree mildly agree mildly disagree strongly disagree

13. He is careless in his attitude toward school work.
strongly agree mildly agree mildly disagree strongly disagree

*14. He reads or spells words backward or with letters reversed.
strongly agree mildly agree mildly disagree strongly disagree

*15. He can do arithmetic but not use it in a practical situation.
strongly agree mildly agree mildly disagree strongly disagree

16. Poor speech has caused him to do poorly in school.
strongly agree mildly agree mildly disagree strongly disagree

*17. He can't stay within the lines when he colors.
strongly agree mildly agree mildly disagree strongly disagree

*18. He doesn't seem to understand what is said to him.
strongly agree mildly agree mildly disagree strongly disagree

19. He doesn't seem to understand what he reads because he doesn't concentrate.
strongly agree mildly agree mildly disagree strongly disagree

20. His drawings are poor because he's always in a hurry.
strongly agree mildly agree mildly disagree strongly disagree

*21. One or both of his parents had a learning problem in school.
strongly agree mildly agree mildly disagree strongly disagree

22. He lacks discipline in applying himself to a task.
strongly agree mildly agree mildly disagree strongly disagree

*23. He has trouble telling the names of colors.
strongly agree mildly agree mildly disagree strongly disagree

*24. He has trouble putting his thoughts into words.
strongly agree mildly agree mildly disagree strongly disagree

*25. He feels unsure of himself when asked to read out loud.
strongly agree mildly agree mildly disagree strongly disagree

*26. His birth was difficult, premature or late.
strongly agree mildly agree mildly disagree strongly disagree

---

*Anticipated "agree" response scored as "disagree".

*27. He is called names by his classmates because of his difficulty in learning.
strongly agree mildly agree mildly disagree strongly disagree

*28. He feels defeated because he has never done well in school.
strongly agree mildly agree mildly disagree strongly disagree

*29. He seems to feel inferior to his classmates.
strongly agree mildly agree mildly disagree strongly disagree

30. He dreads school and just wont' try to do better.
strongly agree mildly agree mildly disagree strongly disagree

*31. He fears new situations because of his poor school work.
strongly agree mildly agree mildly disagree strongly disagree

32. His present schoolwork indicates his future possibilities will be limited.
strongly agree mildly agree mildly disagree strongly disagree

33. He will eventually grow out of his difficulty in school.
strongly agree mildly agree mildly disagree strongly disagree

*34. He is a poor reader just like some other member of the family.
strongly agree mildly agree mildly disagree strongly disagree

---

*Anticipated "agree" response scored as "disagree".

APPENDIX B

CHI SQUARE GROUP RESPONSE PERCENTAGES AND SIGNIFICANCE LEVEL

Chi Square Group Response Percentages and Significance Level

Item		Pro.	Pt. Tt.	Pt. Ev.	Sig.	Lvl.
1.	A	7.7	27.3	51.2	2x2	.001
	DA	92.3	72.7	48.8	3x2	.001
2.	A	3.8	47.8	83.7	2x2	.001
	DA	96.2	52.2	16.3	3x2	.001
3.	A	0.0	4.3	23.7	2x2	.05
	DA	100.0	95.7	76.3	3x2	.01
4.	A	13.6	26.1	54.8	2x2	.01
	DA	86.4	73.9	45.2	3x2	.01
5.	A	7.7	12.5	27.3	2x2	N.S.
	DA	92.3	87.5	72.7	3x2	N.S.
6.	A	0.0	30.4	58.1	2x2	.001
	DA	100.0	69.6	41.9	3x2	.001
7.	A	0.0	0.0	20.9	2x2	.05
	DA	100.0	100.0	79.1	3x2	.01
8.	A	0.0	16.7	36.4	2x2	.001
	DA	100.0	83.3	63.6	3x2	.001
9.	A	48.0	60.0	47.6	2x2	N.S.
	DA	52.0	40.0	52.4	3x2	N.S.
10.	A	3.8	29.2	65.9	2x2	.001
	DA	96.2	70.8	34.1	3x2	.001
11.	A	15.4	20.0	40.9	2x2	.05
	DA	84.6	80.0	59.1	3x2	.05
12.	A	46.2	17.4	20.5	2x2	.05
	DA	53.8	82.6	79.5	3x2	.05

Pro. = Professional-Semi-Professional Group; Pt. Tt. = Parents with children being tutored; Pt. Ev. = Parents with children being evaluated; A = Agree; DA = Disagree; N. S. = Not significant.

Item		Pro.	Pt. Tt.	Pt. Ev.	Sig.	Lvl.
13.	A	7.7	8.7	31.0	2x2	.05
	DA	92.3	97.3	69.0	3x2	.05
14.	A	34.6	56.5	84.1	2x2	.001
	DA	65.4	43.5	15.9	3x2	.001
15.	A	28.0	56.5	75.0	2x2	.001
	DA	72.0	43.5	25.0	3x2	.001
16.	A	33.3	4.2	29.3	2x2	N.S.
	DA	66.7	95.8	70.7	3x2	.05
17.	A	64.0	54.2	72.1	2x2	N.S.
	DA	36.0	45.8	27.9	3x2	N.S.
18.	A	0.0	39.1	66.7	2x2	.001
	DA	100.0	60.9	33.3	3x2	.001
19.	A	12.5	66.7	43.2	2x2	.05
	DA	87.5	33.3	56.8	3x2	.001
20.	A	65.4	16.7	11.4	2x2	.001
	DA	34.6	83.3	88.6	3x2	.001
21.	A	25.0	78.3	72.1	2x2	.001
	DA	75.0	21.7	27.9	3x2	.001
22.	A	15.4	72.0	62.8	2x2	.001
	DA	84.6	28.0	37.2	3x2	.001
23.	A	76.9	47.8	59.1	2x2	N.S.
	DA	23.1	52.2	40.9	3x2	N.S.
24.	A	15.4	20.8	38.6	2x2	N.S.
	DA	84.6	79.2	61.4	3x2	N.S.
25.	A	21.7	45.8	39.5	2x2	N.S.
	DA	78.3	54.2	60.5	3x2	N.S.

Item		Pro.	Pt. Tt.	Pt. Ev.	Sig.	Lvl.
26.	A	7.7	39.1	73.8	2x2	.001
	DA	92.3	60.9	26.2	3x2	.001
27.	A	15.4	4.2	25.0	2x2	N.S.
	DA	84.6	95.8	75.0	3x2	N.S.
28.	A	60.0	73.9	43.2	2x2	N.S.
	DA	40.0	26.1	56.8	3x2	.05
29.	A	16.0	17.4	47.7	2x2	.01
	DA	84.0	82.6	52.3	3x2	.01
30.	A	7.7	41.7	45.5	2x2	.01
	DA	92.3	58.3	54.5	3x2	.01
31.	A	53.8	25.0	36.4	2x2	N.S.
	DA	46.2	75.0	63.6	3x2	N.S.
32.	A	50.0	75.0	83.7	2x2	.01
	DA	50.0	25.0	16.3	3x2	.01
33.	A	57.1	100.0	95.3	2x2	.001
	DA	42.9	0.0	4.7	3x2	.001
34.	A	3.8	44.0	40.9	2x2	.01
	DA	96.2	56.0	59.1	3x2	.001
35.	A	3.8	32.0	27.3	2x2	.05
	DA	96.2	68.0	72.7	3x2	.05
36.	A	14.3	72.7	53.7	2x2	.01
	DA	85.7	27.3	48.3	3x2	.001
37.	A	16.0	56.5	71.4	2x2	.001
	DA	84.0	43.5	28.6	3x2	.001
38.	A	15.4	4.2	29.3	2x2	N.S.
	DA	84.6	95.8	70.3	3x2	.05
39.	A	0.0	45.8	33.3	2x2	.01
	DA	100.0	54.2	66.7	3x2	.001

Item		Pro.	Pt. Tt.	Pt. Ev.	Sig.	Lvl.
40.	A	0.0	8.7	15.4	2x2	N.S.
	DA	100.0	91.3	84.6	3x2	N.S.
41.	A	3.8	52.0	45.2	2x2	.001
	DA	96.2	48.0	54.8	3x2	.001
42.	A	53.8	12.5	26.8	2x2	.05
	DA	46.2	87.5	73.2	3x2	.01
43.	A	3.8	56.0	47.5	2x2	.001
	DA	96.2	44.0	52.5	3x2	.001
44.	A	38.5	41.7	65.9	2x2	.05
	DA	61.5	58.3	34.1	3x2	.05
45.	A	8.0	60.9	52.4	2x2	.001
	DA	92.0	39.1	47.6	3x2	.001
46.	A	50.0	20.8	53.7	2x2	N.S.
	DA	50.0	79.2	46.3	3x2	.05
47.	A	15.4	60.9	63.4	2x2	.001
	DA	84.6	39.1	36.6	3x2	.001
48.	A	11.5	18.2	19.0	2x2	N.S.
	DA	88.5	81.8	81.0	3x2	N.S.